

AMERICAN

APRIL, 1959 • 35¢

# Cinematographer

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PRODUCTION

The Magazine of Motion Picture Photography

## *In This Issue:*

The Cinematographer's  
place in VTR

Licking Contrast prob-  
lems with ND filters.

"Oscar" Nominees For  
Cinematography

Can Ektachrome Be  
intercut with Koda-  
chrome?

Along with a number of  
other hard-to-find books  
and John Wayne for  
"The Sign" photographed by  
Walter Pardon, A.S.C.





Don Malkames (center) examines film strips on the "Bandwagons" set. John Newland, Director (right), discusses film quality with DuPont Technical Representative, Joe Dougherty.



Don Malkames (left) and son, Ted

## "New DuPont 'Superior' 2... the finest film I've ever used"

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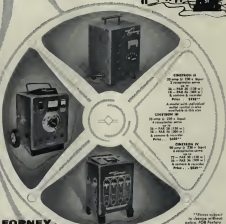
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## Cinematographer

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**BEHIND THE CAMERA** view of a camera crew at work. Using up a two shot of actors Ward Bond and John Wayne (winning shot) for "Werner Brothers" color production, "The Grapes," photographed by Russell Harter, A.S.C. Story of the photography begins on page 234 of this issue.

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# WHAT'S NEW

in equipment, accessories, services

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Cineklud Engineering Co., 768 Tenth  
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a new line of microphone booms for  
studio and location use. Engineered  
for rugged service, booms extend from  
6 to 14 ft. and 6 to 20 ft. A feature is  
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#### S.O.S. Jr. Tripod

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styled, designed for professional 16mm  
cameras is announced by SOS Camera  
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New York, 19, N.Y. Features include  
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fractal star knob threading, curved  
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plete line of tripod accessories. List  
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#### Moviola Extension Plate

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series of film editing machines. Acces-  
sory permits joining additional sound  
heads so that editor may use more than  
one optical or magnetic sound head in  
mixed sound editing. Accessory is so  
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#### NCE Viewer

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ter all in one unit is the NCE Viewer  
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Equipment, Inc., 209 West 42nd St.,  
New York 36, N.Y. It can be used  
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**Auricon**  
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Shows starting on African adventure with the Auricon "Cine-Voice" Sound Camera, are cameraman H. Duncan Abraham (left) and Dr. Dan Marais, Naturalist and Explorer.



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# PHOTOGRAPHIC ASSIGNMENTS

WHAT THE INDUSTRY'S CAMERAMEN WERE SHOOTING LAST MONTH

ARTISTS INDICATE TELEVISION FILMS

## AIRBO ARTISTS

WINNIE ROSE, ASC, "The Big Chase" (C-Scope & Technicolor) (Savanna Prods.) with Victor Mature and Rhonda Fleming. Joseph Newman, director.

## AMERICAN NATIONAL

STANLEY BORUMLEY, ASC, "World of Games" (Ziv TV) Jack Arnold, director.

EDMUND BAYLIS, CURT FETTER, MORRIS ARNOLD, "Highway Patrol" (Ziv TV) with Budnick Crawford.

CURT FETTER, GILBERT VAN ENK, ASC, "Richard Kipling's Morning Again, Ben Hoffman, "Tough Riders" (Ziv TV) with Karl Taylor.

BOB HOFFMAN, JACK MARQUETTE, CURT FETTER, "The Millionaire" (Ziv TV) with Gene Barry.

CHARLES VAN ENK, ASC, "Richard Kipling's Morning Again, Ben Hoffman, "Tough Riders" (Ziv TV) with Richard Carlson.

BOB HOFFMAN, "Tombstone Territory" (Ziv-TV) with Pat Conway. Richard Rose, director. "Challenge" & (Pilot, Ziv-TV) Otto Lang, director.

## COLUMBIA

JOSEPH BAIS, ASC, "Middle of the Night" (Shooting in NY) with Kim Novak and Fredric March. Delbert Mann, director.

RONALD LIPMAN, FRED JACKMAN, JR., HENRY FREEDMAN, ASC, "Alma Godwin's Thruway" (Seven Seas).

ALVIN WONG BOWE, ASC, "The Last Angry Man" (First National Prod.) shooting in NY) with Paul Muni and Betty Palmer. David Mann, director.

FRED GATLYN, ASC, "Father Knows Best" (Seven Seas) with Robert Young and Jane Wyatt. Peter Tewksbury, director.

GEORGE ANDERSON, ASC, "Diana Reed Show" (Seven Seas) with Diana Reed. Oscar Rudolph, director.

MORRIS FREEDMAN, ASC, IRVING LIPMAN, "Behind Closed Doors" (Seven Seas) Don Taylor, director.

CLARENCE WARRINGTON, ASC, "The Legend of Tom Dooley" (Shoemaker Prods.) with Michael Landon and Jo Manresa. Ted Post, director.

J. BERNI CONYER, ASC, "Naked City" (Shooting in N.Y.)

TED MOORE, "Admission in Admiration" (C-Scope & Color, Warwick Prod., shooting in Africa) with Robert Taylor. Richard Thorpe, director.

SAM LEAHY, ASC, "The Crimson Ki-mono" (Globe Ent.) with Victoria Shaw and James Shigeta. Donald Feller, director.

FRED JACKMAN, JR., "Tombstone" (Seven Seas).

## FLUORACRAFT STUDIOS

VIRGIL MILLER, ASC, "You Bet Your Life" with Groucho Marx. Robert Duvall, director.

## FOX WEITMAN AGENCY

GEY BOE, ASC, "Wanted Dead or Alive" (Four Star Prods.) with Steve McQueen, "Trackdown" (Four Star Prods.) with Robert Culp.

GEORGE DUKAKY, ASC, CHARLES BERGE, "Dark Powell's Zone City Theatre" (Four Star Prods.) with Dick Powell.

GEORGE DUKAKY, ASC, "The Effluent" (Four Star Prods.) with Clark Gable.

JOSEPH BAIS, ASC, GEORGE DUKAKY, ASC, "Richard Diamond" (Four Star Prods.) with David Janssen.

JOSEPH BAIS, ASC, "Jeannie Carson Show" (Four Star Prods.) with Peter Breck, "The David Byrne Show" (Four Star Prods.) with David Byrne.

## GENERAL SERVICE

HARRY WILK, ASC, "The Bob Cummings Show" (Levinson Prods.) with Bob Cummings and Rosemary DeCamp. Bob Carr, director.

NEAL BACCHETTI, "The Adventures of Ozzie & Harriet" (Stage 3 Prods.) with the Nelsons. Ozzie Nelson, director.

ALAN DALLAS, "Flora" (McCadden Prods.)

FRANK FILLARD, "Border Patrol" (Gallo Prods.) with Richard Webb. Jesse Yar, director.

## GOLDWIN STUDIOS

NORMAN BACKUS, ASC, "Loretta Young Show" (Lewy Prods.) with Loretta Young.

## INDEPENDENT

FRANK FLAHER, ASC, "The Underhills" (Panavision & Ektamir color, Hecht-Bell Laboratories in UA, shooting in Mexico) with Bert Lancer and Audrey Hepburn. John Huston, director.

FRED YOUNG, "Solomon and Sheba" (Techicolor, Edw. Small Prod. for UA, shooting in Spain) with Yul Brynner and Gene LeBell. Louis L. Lasker, director.

RUSSELL MURPHY, ASC, "Spartacus" (Technicolor, Bryna Prods.) with Kirk Douglas and Laurence Olivier. Anthony Mann, director.

RENEE HALLAN, ASC, "Operation Petticoat" (Grosvenor Prod., shooting in Keyport, Fla.) with Cary Grant and Tony Martin. Blake Edwards, director.

ARTHUR ARKING, ASC, "Any Way the Wind Blows" (C-Scope & Color, Arvin Prod.) with Jack Hawkins and Thelma Day. Michael Gordon, director.

JOSEPH BAIS, ASC, "Dolls Against Tomorrow" (Harbell Prod. U.A. release, shooting in NY) with Harry Belafonte and Robert Ryan. Robert Wise, producer-director.

RAY FORTER, ASC, "Naked in Eden" (Oak at Prods.) with Jane Vincent and Michael O'Keefe. Jerry Wicks, director.

## KEYWEST STUDIOS

WALTER STERNER, ASC, Series of religious pictures. (Family Film) Eddie Dew and William Christen, director.

## KITTY STUDIO

JACK MARRA, "Revlon 8 1/2" (Columbia Inc.) with Jan Davis and Long John Silver. William Schneider, director.

## MCCORMACK STUDIOS

RONALD BAIS, "Death Valley Days" (McCormack Prods.)

## METRO-GOLDWYN-MAYER

LESTER STERNER, ASC, "Cal, Humphrey J. Clark" (Judy Fox Prods.) with Alan New and Frank Jenks.

WILLIAM STERNER, "The Thin Man" with Peter Lawford and Phyllis Kirk.

ROBERT SMITH, ASC, "It Started with a Kiss" (C-Scope & Color, shooting in Spain) with Gloria Ford and Debbie Reynolds. George Marshall, director.

DALLY DEVERMAN, "Our Step Beyond" (John Newland, director).

WILLIAM STERNER, ASC, "Never So Few" (Columbia Prods. & Color, shooting in Cayman) with Frank Sinatra and Sammy Davis, Jr. E. George, director.

JOHN NICHOLSON, "Raiders" (CBS-TV) with Ken Fleming and Clint Eastwood.

HAROLD STERNER, "Red at the Post" (Robert Eads Prods.).

WILLIAM STERNER, ASC, "The Lawless Years" (Jack Chertok Prods.) with James Gregory and Robert Kanne. Alvin Karp, director. "Philip Marlowe" (Jack Chertok Prods.) with Phil Carey. Irvin Kershner, director.

## MOVIE PICTURE CENTRE

LESTER STERNER, ASC, "Ernst Young Thomas Show" (Desilu Prods.) with Ernie Young. Sheldon Leonard, director.

MAX BICKER, ASC, "December Bride" (Desilu Prods.) with Spring Byington and Pamela Reilly. Ferdinand DeLorenzo, director. "Lucille Ball, Don Aronow Show" (Desilu Prods.) with Lucille Ball and Don Aronow. Jerry Thompson, director.

NEAL BACCHETTI, "Washington-D.C. Playhouse" (Desilu Prods.).

Continued on Page 324

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## TECHNICAL QUESTIONS & ANSWERS

Conducted by Walter Strenge, A.S.C.



**Q**uestions relating to cinematography or other phases of film production are invited from readers and will be answered by letter by Walter Strenge or by other qualified members of the American Society of Cinematographers. Questions and answers considered of general interest will appear in this column.—Ed

**Q** Please give me information about and source of cakalons ("cookies") which I note are used extensively in entertainment and TV motion pictures. I would like to see the lighting effect on a small set 7' x 9' in size. What size cakalons would I need for this and at what distance should it be placed in front of a lamp to give the desired effect?—L.C.R., Alexandria, Va.

**Answer:** Cakalons panels can be purchased from Mole-Richardson Company, 907 No. Syracuse Ave., Hollywood 28, Calif. (List price, \$21.20 each, plus \$1.20, F.O.B. Hollywood.) You will probably need two for the area described. Set them 6 ft. in front of the light source.—Stanley Carter, A.S.C.

**Q** I have three questions relating to low-key lighting for exterior night effects. (1) Please explain low-key lighting and the use of some exposure system involving a reflectance-type light meter. (2) If "low-key" actually means low intensity of key light, how is adequate depth of field accomplished? (3) When subjects must move about a great deal on set, toward or away from the camera, do A.S.C. cameramen solve the problem with follow focus or by creating sufficient depth of field to cover the area of movement, or by focusing at the hyperfocal distance—especially when it is desired to obtain reasonable sharpness of detail in both foreground and background objects?—R.L. Allsop, New York, N.Y.

**Answer:** (1) I do not know of any cinematographers who use a zone exposure system. A light meter in the cinematographer's hands plays no part

in creating effects. It is used almost entirely as a tool for determining the strength of the key light. A cinematographer knows from experience that 100 foot candles incident light (placing meter at the subject and pointing it toward the light source) will give a normal exposure reading for the face and cause the negative to print a little above the middle of the printing scale. Effects are created by the cinematographer through his knowledge and artistic ability. An exposure meter is for the sole purpose of reading exposure. It is never used to create.

(2) "Low key" lighting does not mean lowering the intensity of the key light. If the negative is to be one of proper printing quality, there must be density somewhere in it to prevent it from becoming an underexposed negative. Naturally, the place for the density is in the highlights. Leaving the highlights at normal strength and reducing the 40-light in the medium tones and shadows is how effects are created and a printable negative is obtained.

Low-key lighting can be and is accomplished in many cases where a normal light requirement is built up four or five times, but the lens is stopped down to compensate—thereby retaining a normal exposure. In such instances where the cinematographer wishes to create a greater depth of field, if the light level is increased from 100 to 400 foot candles, this will allow two stops smaller on the lens and thus depth of field is increased.

(3) Cinematographers follow focus in all cases where subjects move to and from the camera and sharp focus on subjects is required. In cases where a subject is to play in the foreground throughout the entire scene, and another subject moves from the camera beyond the point that will hold focus,

Continued on Page 233

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# HOLLYWOOD BULLETIN BOARD



WILLIAM J. GERMAN, talking before members of the American Society of Cinematographers at dinner given in his honor February 23, cited how industry's cinematographers have successfully met all shortages and challenges during past 32 years—from advent of sound film to television.

William J. German, President of W. J. German, Inc., was honored guest at the American Society of Cinematographers at its February 23 dinner-party.

In his after-dinner talk to the assembled cinematographers, he reminded them that because of industry or neglect, their role and importance in the production of motion pictures is not receiving the recognition it deserves.

"Invariably I can always find plenty of publicity given in the trade papers about producers, directors, writers, and the stars," he said, and added that "this is probably because these people make it a business to be heard."

"It would appear to me," German continued, "that you have put all too much too long a time the telling of who and what you are and what you mean in motion pictures and TV." He pointed out that the ASC members should now give serious thought

to promoting and exploring themselves as individuals and as a group and to improve upon the industry as well as the public that "without the artistry and vision you men put into the photography of Hollywood films, the work of the writers, producers, directors and all the others would be severely let down."

German pointed out that much of the cineaste movie maker's enthusiasm is due to his desire to approach the artistry and perfection of the professional cinematographer.

Mr. German is one of five Honorary Members of the A.S.C.

\* \* \*

Probably no other group within the motion picture industry has expanded so much time and effort to place before the public "The

Continued on Page 322



ASC PRESIDENT Walter Branga wishes congratulations at Bud McCord's native gold ASC 25-year membership card from William German, who also distributed similar cards to dozens other ASC veteran members.



WHILE VISITING Hollywood, British cinematographer Paul Brown (2nd from left) and Jeff Jacobson (right) were guests at ASC's February 4 new meeting. Also in picture are Ed Coleman, ASC, and Bob de Gress, ASC.



## LIGHTS



## GRIP EQUIPMENT



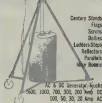
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## BULLETIN BOARD

Continued from Page 328

case of PerTV" is has the American Society of Cinematographers.

According to A.S.C. President Walter Strang, more than 12,000 guests of honor, including representatives of the highly-regarded Academy Award circle "Who Can't We Have Per TV?" have been mailed by the Society to people throughout the country, with more scheduled.

William Perlberg, writing in *The Journal of The Screen Producers Guild* for March, 1966, says: "To me the technological advance (Per TV) is nothing more or less than a superior distribution system, an extension of the theatre into the home."

• • •

Harry Stradling, A.S.C., currently directing the photography of Warner Brothers' "A Summer Place" in Monterey, Calif., was the subject of newsmen Faxon Karkutacker's column, "Lovely Arts", in a recent issue of the *San Francisco Chronicle*. Typical of the kind of publicity that can benefit cinematographers is Karkutacker's piece, replete of interviews with Stradling while shooting on the Northern California location.

"I like working in color," Stradling told Karkutacker. "It's more satisfying than black and white, and frankly, it's easier. But I'm not sold on the wide-screen process



HARRY STRADLING, A.S.C.

except for pictures which are so to be filmed mostly out of doors. The proposition are not as good, and it is difficult to get into an intimate scene. "A Summer Place" is not being filmed for wide screen.

"Morton Heacock asked me if we could work out the dummies for 'Autumn Place'. In silent pictures we used to use dummies on faces, but that was merely mechanical. And since 'Autumn Place' was in color, we couldn't do it by changing lights. We tried another system with shutters and it seemed to work out all right. A man named Frank Flanagan helped with the problem. But we also shot straight away to protect ourselves, in case the dummies hadn't been successful."

Tricky camera shots do not interest him, Stradling told Karkutacker. "I think they are disgusting. If someone comes out of a theatre and is asked what he thought of the photography of the picture and answers, 'Gee, I forgot to mention it, I think the cinematographer has done his job well'."

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564 JOURNAL OF DOCUMENTATION

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# PHOTOGRAPHING "RIO BRAVO"

Subtle treatment of colors enhanced the visual mood of this rugged western drama photographed in Eastman Color by Russell Harlan, ASC

By HERB A. LIGHTMAN

TO MAKE A color film of the Old West in which color is played down rather than accentuated—this was the challenge to Russell Harlan, A.S.C., in directing the photography of Warner Brothers' hard-hitting western saga, "Rio Bravo".

"Rio Bravo" is an offbeat western, quite

different from the traditional cowboy-and-Indian shoot-'em-up, and much more in keeping with the current trend toward psychological or "adult" westerns in which emphasis is placed on character rather than on sheer action. "Rio Bravo" is curiously lacking in traditional outdoor action—there isn't a

chase or typical running gun fight in the entire 2 hours—but the film bodes with an undercurrent of suspense and tension and which sometimes bursts forth in explosions of close action that has a stunning impact on the viewer.

From the cinematographer's viewpoint, the object was to create a visual



ON LOCATION: John Wayne, right, star of "Rio Bravo," looks on while Russell Harlan's camera crew photographs scenes involving Dean Martin

and here in background. Although photographed in Eastman Color negative, visible color layers the picture.



need to complement the threatening build-up of the action, and this meant playing down color as much as possible.

"'Bravo' was not conceived as a scene picture," Harlan explains. "It is a period picture and required a kind of old-fashioned flavor, as well as a certain brooding atmosphere to further the mood of the story. If the color is too vivid in such a film it can detract from the visual effect aimed for, so we tried for an almost monochrome result, as if we were shooting in sepia tones."

"The principal action takes place along a western street in which adobe, wood and earth all exist naturally in tones of tan and brown—pretty drab, but the more drab the better in this particular case. The choice of wardrobe tied in with this conception. We used tones of brown and gold, with very few blues or greens. We kept the walls of sets in brown tones and let them fall off a little to further the effect of sepia. For night exteriors we used yellow light through the windows—and not too brilliant—to suggest coal-oil lamps burning inside. I am inclined to underplay color rather than over-emphasize it. The sadder effects create a truer mood. For example, I presently feel that an overcast sky is wonderful for shooting exteriors, because then you see colors in their true values, more as they actually look to the eye."

The exterior of "Rio Bravo" were filmed in what is known as Old Tucson located in a valley 15 miles from Tucson, Arizona. Built in 1940 by Columbia Pictures for the film "Arizona," the town is a replica of the original walled city of Tucson and has been a popular tourist attraction ever since. Because the existing crumbling buildings did not truly represent a border town of the 1880's, Warners built an entirely new main street approximately four city blocks long, inserting the old pueblos and including 26 structures, several of them two story affairs. This project, designed by Art Director Kay Kiser, was carried out by a construction crew of 75, who did the job in five weeks before the company arrived.

Four five-ton trucks and four trailers were necessary to transport set dressings from Hollywood for hotels, jail, newspaper office, saloons, stables and other business enterprises housed in the structures. Every item of set-dressing was brought from Hollywood. The only part of this expensive set which was not left when the company departed was a



RUSSELL HARLAN, ASE

"Vivid colors would have lessened the impact of this rugged western drama."

large warehouse costing \$15,000 to erect and which was blown up in the climactic sequence of the picture.

The daytime exteriors were filmed in heat ranging up to 124 degrees, and the company was thankful when the schedule finally called for ten consecutive nights of shooting. But their relief was short-lived and what followed became for Harlan and his camera crew a veritable nightmare.

Southern Arizona was invaded by millions of grasshoppers which blanketed Tucson's business district and, attracted by the big lights, eventually found their way out to the set. They became so thick in front of the lights that the director was forced to keep all lights extinguished until scenes were ready to be filmed, creating a real hardship on electricians, set dressers, etc., whose work must be done between takes. The "hoppers" were finally tricked by turning on flood lights at the far end of the street to draw the bugs away from the set.

Commenting on this almost Biblical-like plague, Harlan observes: "There were so many grasshoppers that we had to sweep all the sets off each night in order to shoot. They were literally caked on the walls, and you couldn't even talk, because they'd hit you in the mouth. We set up an arc light about 200 yards down the street to draw them from the set, and within a matter of seconds it was just a mass of grasshoppers, packed like an anvil. The smell of burning grasshoppers was nauseating. We would turn all the lights out and rehearse with skin lights, and

then try to make the scene in one take because grasshoppers would immediately descend on the set lights as soon as they were turned on, causing flickering shadows and actually cut down the exposure. They were so numerous that jet planes in the vicinity were ordered out of the air because the bugs were clogging the motors. At 5,000 feet there was a cloud of grasshoppers so thick the airframes couldn't fly through it and had to land elsewhere. During home from the location at night we found the roads covered with a slippery blanket of bugs three inches deep."

Russ Harlan, who looks like a rancher but talks like an artist, won great praise for his filming of the Vincent Van Gogh biography, "Last For Life" at MGM a few years back. In photographing "Rio Bravo" he admits that he had an artistic conception in mind inspired by the work of a famous painter: "I was striving for a flat rather than a modelled effect. More like a Charles Russell painting, with the long foreground, as he generally painted things, and the true light source that was there. We tried to capture that and at the same time make the characters come alive. We were also trying to be photographically honest. The street we used is very real and earthy—no glamour to it. The only vegetation you see is mostly cactus. This was not a vehicle for luscious or exciting photography. We couldn't shoot beautiful clouds or rock formations, yet the backgrounds did give the feel of a real western town that we could not possibly have gotten if the picture had been shot on the studio back lot. When we looked down the street our view wasn't blocked off by eucalyptus trees or California sycamores. Instead, we could see far miles, and everywhere were rugged mountains. It wasn't cheating—it was real. Had we shot it in Hollywood it would not have had that authenticity."

Harlan's sense of photographic honesty extends also to his attitudes toward filming night sequences. While it is possible to shoot night sequences in color in the daytime, using blue filters and underexposure to gain the effect, Harlan prefers to shoot them actually at night as they were done in "Rio Bravo." It not only requires the very best conditions to get a creditable night effect at night, but actually shooting at night is part of being honest in an approach to the story.

There is not a great deal of camera

Continued on Page 231

# The Cinematographer's Place In Video Tape Recording

It is the film industry's directors of photography who are best qualified by experience and aesthetic concepts to light, compose and record dramatic shows for VTR, according to Hal Mohr, who participated in the recent Ampex demonstrations in Hollywood.

By HAL MOHR, A.S.C.

THE CONTENTION of proponents of video tape that "VTR can do anything that can be done with film and a motion picture camera" was demolished last month in a demonstration of a new self-contained mobile video tape unit, which can record on tape virtually any type of outdoor action in the same manner that exterior sets and action are filmed on location with a camera car.

Designed by Ampex Corporation to demonstrate to motion picture producers that "a man riding a horse in a western exterior" can be videotaped as simply and with the same fidelity as film, the mobile unit, called the Ampex Videotape Cruiser, consists of a specially designed autobus equipped with two live TV camera chains, an Ampex studio-type videotape recorder, control and switching units, and its own power supply.

In use, two or more TV cameras pick up the action which is piped through the Cruiser's control panel and thence to the recorder. Provision is made to mount cam-

eras on roof of the vehicle or on a retractable "cow-catcher" platform on front of it. (Although my observation of this equipment and study of its results was necessarily limited, I feel that motion picture technology and experience could profitably be applied in improving the portability of the unit for making running shots—especially in the placement of cameras and in re-designing the lower camera platform.)

All this was demonstrated to members of the motion picture and television industries and the press last month at Desilu's Motion Picture Center studios in Hollywood. Earlier, the Videotape Cruiser and its personnel had traveled to Las Vegas and Hoover Dam where conventional running shots were made with one camera mounted on the roof and another on the lower-level platform. The tape footage made on those locations was exhibited on closed circuit TV monitors at Desilu, as also was the Cruiser used in the recording operation. The latter was



MOBILE VIDEO TAPE recording unit demonstrated in Hollywood last month by Ampex Corporation. Roof and retractable "cowcatcher" platform accommodate two TV cameras for making running shots.



UNIT IS A COMPLETE video tape recording studio on wheels, and includes the recorder, shown at left center, mixers and mixing panels at rear, and generator that furnishes power for all electronic equipment.



**AUTHOR RALPH ROSE** demonstrated motion picture set lighting techniques for VTR at Ampex demonstration. Here set was lit at 100 FCs, and photographed with several exposures.



**REPRODUCTION** of monitor image of scene at left, as picked up by the VTR camera, with lens set at 1/11.



**SAME SCENE** as above, but with the lighting on Astele reduced to 10 FCs. Light coming through windows remained at 100 FCs. Scene was photographed at same exposure as the one above.



**MONITOR IMAGE** of scene at left, demonstrates results when low key lighting is properly controlled in VTR, with lens set at white stop as above—1/11.

parked outside one sound stage and served as both recorder for demonstrations given during talks by Ampex engineers and as a playback unit for these same tapes as well as the demonstration tape recorded on the Las Vegas-Hoover Dam location trip.

I had been invited by Ampex to participate in the demonstrations at Desilu as a representative of the industry's directors of photography, and to evaluate the potentialities of VTR for certain types of TV program production in the light of our knowledge of lighting and photography for motion pictures.

As a result of the four days I spent with the Ampex people in this Hollywood demonstration of videotape, I do not pretend to have become an expert on videotape recording, but only a better informed director of photography who may one day be called upon to "photograph" productions for television with VTR. It is not only my

opinion but also that of many who attended the VTR lighting and recording demonstrations at Desilu that it is the fine industry's directors of photography who are best qualified to light, compose and record dramatic shows for videotape recording. In actual practice, lighting and camera techniques productive of best results for VTR are essentially the same as we use in photographing motion pictures. What it all amounts to for the director of photography is that with VTR, he simply has a new medium—a new type of film—to work with. It is a relatively simple matter for any qualified director of photography to learn the essentials necessary to apply his art and techniques to videotape productions.

As I pointed out in my talks at the Ampex demonstrations, I feel confident that, with the proper cooperation from the electronic engineers and technicians, I can do

*Continued on Page 244*

# LICKING CONTRAST

Short scale limitations of

black-and-white emulsions enhance

By JOSEPH V. MASCELLI



GRADUATED ND filters in four types of professional 2"x3" mounts. 1—Clear glass square with center of ND gelatin taped on; 2—Section of ND gel mounted in an Sbakon Kodak metal filter frame; 3—Front of cardboard frame with filter gelatin taped on; 4—Graduated laminated ND filter in which the filter component is sandwiched between two flat panels of glass. With the first three examples, the filter gelatin may be cut to any size or pattern to suit needs of the photographic problem at hand.



GRADUATED ND filter being mounted in filter holder of Arribo movie box, which permits accurate alignment of filter segment with area in scene requiring correction, as shown below.



VIEW OF ARRIBO camera movie box from rear. Arrow points to graduated ND filter as it would be positioned to tone down bright sky area in scene at right, thus permitting improved exposure and detail in figures in scene.

**F**ILTERS OF ONE KIND or another play an important part in the photography of almost every motion picture made today. There are light-balancing filters and color-compensating filters for color photography, correction filters for black-and-white photography, and neutral density—"ND"—filters which are applicable to both color and B&W photography.

Because the intelligent use of an ND filter will frequently make the difference between an excellently photographed scene and a commonplace result, here is a subject of more than common interest to the upcoming motion picture photographer with a passion for perfection in his camera work.

Standard neutral density filters are commonly used as contrast neutralizers, since they provide a means of reducing the light transmission through the lens, necessitating opening the diaphragm and thereby producing a softer, less contrasty image. Since NDs cut down all light equally they can be used with color film or very high speed black-and-white film to allow shooting at moderate lens apertures outdoors. They also provide a means for controlling depth

**TYPICAL OUTDOOR SCENE** adaptable to showing of sky area for improved pictorial result. Using a 20 or 25 graduated ND to correct sky area in a scene like this results in better color or tone rendition in foreground subjects. Scene is also typical of a situation where, with care, the camera could be panned without going trouble in the filtered area of the scene.



# PROBLEMS WITH ND FILTERS

color films can be overcome and the pictorial potentials of  
by use of partial or graduated neutral density filters.

of field since they allow the lens to be used at wide apertures, permitting differential focusing.

The graduated or partial ND filter reduces only the "hot" portion of the light. It thus extends the inherently small latitude of color emulsions by balancing highlights and shadows on tricky sun drenched exteriors or "hot"—windowed interiors where compromise exposures would sacrifice quality. This is because it is impossible to compress long scale lighting onto color film's short scale emulsion.

Neutral density filters are available in two- or three-inch Wratten gelatine in two densities equally spaced from .10 density (80% transmission) to 1.00 density (90% transmission). They provide a wide range of control that will fit any light-balancing situation. One needs only to choose an ND having the transmission factor necessary to reduce the scene's "hot" area for a more balanced exposure. In gelatin form ND filters can be cut and positioned in the mattebox to act as a partial filter. In graduated glass form they consist of a half sheet of gelatin laminated between two- or three-inch squares of "B" glass. In use, the soft demarcation line between the filter and clear glass is positioned on the horizon or skyline in the picture or along the edge of a building in a manner to disguise its presence.

Let's consider a typical outdoor color problem in which the sky is about  $1\frac{1}{2}$  stops "hotter" than the landscape. Say the sky reads F/16 while the scene in general reads F/9. A compromise exposure of F/12 would result in the sky being too "hot" and the scene itself slightly underexposed. However, a graduated neutral density filter (in this case a

.50 ND, which transmits 32% of the skylight, having a factor of 3 or  $1\frac{1}{2}$  stops) placed across the top of the frame will allow the F/9 ground exposure to be employed, resulting in a more balanced rendition of the natural scene with full detail throughout. This would be equivalent to extending the film's latitude  $1\frac{1}{2}$  stops. Where a darker sky is desired, a heavier ND filter is used.

The reverse of this problem can occur when shooting a hot sandy beach having a much higher exposure value than the sky, because of the terrific reflection. Here the graduated ND would be inverted in the matte box so that the filter area controls the beach and the sky exposure.

The utilization of neutral density filters in this manner can be compared to "dodging" in producing enlargements of still photographs. Here, however, the dodging is done in the camera at the time of exposure. The control available through the careful balance of light values actually extends the short scale of color film so that it appears to possess far greater latitude. Compromise exposures can be dispensed with—every part of the scene can be given the precise exposure it requires.

Use of partial NDs is not limited to holding back sky or sand. While many cameramen think only of using the graduated or partial ND horizontally there is no reason why they can not be employed vertically, diagonally or at any other angle when the occasion arises. Take the case of a tall building occupying one side of the frame while a sandy street fills the other side. By placing the neutral density

Continued on Page 248

HERE THE FILTER requirements are reversed. Instead of blinding the sky area, the darkest when even of the church facade requires correction. Such problems are usually solved by cutting a section of ND gelatin of the desired density to match the church outline, as shown at sketch below, and mounting it in filter holder. As precise matching of ND filter with scene is important, this can only be done where camera provides for viewing scene through the looking lens.



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THANKS TO THE decision of the Academy of Motion Picture Arts and Sciences to restore its second award for cinematography, ten directors of photography are in the "Oscar" Derby this year to win the two Academy Awards that will be given for the best achievement in cinematography during 1958.

Of the twenty film productions selected by Academy members as candidate entries for cinematography awards

and reported in our February issue, five black-and-white and five color productions were subsequently chosen in the Academy balloting for nominees.

While it is the productions themselves that are voted upon by the Academy, it is the directors of photography to whom the awards are presented the evening "Oscars" are handed out at the Pantages theatre in Hollywood in gale presenta-

Continued on Page 233





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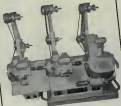
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## Can Ektachrome Be Intercut With Kodachrome?

Laboratory men cite best procedures

to follow to obtain quality prints

from your 16mm color photography

**OPTIMUM COLOR RESULTS** and how they can be achieved is a subject receiving undiminished attention of producers and photographers of 16mm motion pictures. It was one of the most frequently discussed subjects among those who attended the 15th Annual Motion Picture Workshop staged by The Calvin Company in February on its Kansas City sound stages. It also was subject of an article in a recent issue of *The Aperture*, workshop publication for 16mm film producers issued by the same company.

One of the most frequent questions raised following introduction of Eastman Kodak Company's new 16mm Ektachrome film, according to The Calvin Company, was "Can Ektachrome be intercut with Kodachrome?"

"When we ran our first tests some months ago," said a Calvin technical man, "the answer seemed to be 'Yes'—a cautious answer, because we were working with a brand-new product. Now, however, on the basis of more recent printing experiences, the answer has become 'No—not without some-by-arcane color correction.'"

Bill Hedden, Manager of Calvin's Printing & Processing Division, reports: "Ektachrome film manufactured on a production basis has different characteristics than the first sample footage tested. Edited Ektachrome now being received requires a different printing filter balance than Kodachrome. Color correction is required to achieve an even print from intercut material."

The best procedure to follow, the *Aperture* article points out, is to avoid intercutting Ektachrome with Kodachrome, adding that either all-Ektachrome or all-Kodachrome well-exposed originals will provide satisfactory prints.

If intercutting cannot be avoided, it would be well to discuss the problem with your laboratory. The problem—and the costs it involves—will vary with different batches of film, and with the type or release printing selected. For practical purposes, this becomes an individual problem, and should be analyzed and the answers worked out on a personal basis.

"Let's keep in mind that Eastman's 16mm Ektachrome is a superior camera product, capable of producing an improved quality print—and well worth all the transitional problems," concluded Hedden.

Still another question on which Calvin's engineers have very definite opinions concerns the use of reversal or positive 16mm color film in the production of prints. Although color reversal has been the standard in 16mm color release printing for nearly twenty years, they point out, a basic question was raised in mid-1956 when Eastman's 16mm color interrogative type 7270 was introduced to supplement the existing Eastman 16mm color positive print stock (type 7302).

If the printing method which the new 16mm color interrogative opened up would provide quality prints, it possessed many advantages—not the least important of which would be:

1. Lower print costs due to the lower price of the positive color stock, plus use of single strip (instead of A & B roll printing)
2. Protection for the original film, since A & B rolls would be used only for making the interrogative, and the release prints would be made from the negative.

How has it actually worked out?

The Calvin Company's *Aperture* article explains "... there's no question but that many of the big film printing contracts have gone over completely or in greater part to the 16mm positive color print. However, the main reason for this shift was lower cost.

"What about quality?"

"Quality of 16mm color positive prints from 16mm color interrogatives has been considered acceptable since the late Summer of 1956, shortly after the negative's introduction. The color of the positive print is slightly different from the color in reversal printing. A good deal of personal opinion is involved in choosing between the two.

"The definition in color positive printing is close to the definition of the color reversal print made from the original—but doesn't match it. In our own case we have designed

Continued on Page 230

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FIGURES SHOW various features of British amateur John Dehorn's homemade animation stand. Fig. 1—Hand wheel controls movement of baseboard. Fig. 2—Dipping off drawing before lowering piston to make exposure. Fig. 3—Dehorn checks his storyboard during a production planning session. Fig. 4—A professional style stage shot guides animation sequence in each step of the animation photography.

Amateur's creation boasts many professional features, has turned out two prize-winning animated films

## HOMEMADE ANIMATION STAND

By DEREK HILL

EVERY MENTION in *American Cinematographer* of the home-built animation stand of John Dehorn has resulted in inquiries about the construction and operation of the apparatus. Dehorn, the young British amateur film maker whose cartoons *The History of Walton* and *The Battle of Singapore* have won him innumerable awards and an international reputation, recently showed me his equipment which has recently been transferred to the central London cinema-studio headquarters of the Grasshopper Group, the amateur cine organization which Dehorn founded in London a little over five years ago.

"I built the stand with a friend who worked in the engineering business," he told me. "He was building fire-engines at that time, and things were immensely so tight that he smuggled me a few gear-wheels and rods to keep the cast down. I remember him being helped home one day with a stiff leg—actually he'd got the largest metal rods up

his trouser leg."

Despite these initial advantages, the animation stand remains a relatively elementary construction, incorporating bicycle chains and even paper clips. Basically, of course, the requirements of a stand are similar to those of a trailer; a camera platform has to be poised above an adequately lit working surface.

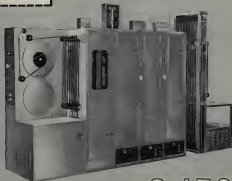
Beyond this, the main essentials are that the baseboard can be moved and easily controlled in North-South and West-East directions. "Quite often nowadays professionals have animation tables so arranged that only the peg bar moves," Dehorn told me, "but that's a more complex construction."

On Dehorn's stand two rotating handles control these sideways and forwards movements. (See Figs. 1 and 2). To pan the background the art work is fixed to the base-

Continued on Page 244

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# Do-It-Yourself Sound Recording

By ALLEN JACOBS

*The Cubix Co., Inc., Kansas City, Mo.*

**Importance of controlling acoustics  
for maximum sound quality in  
magnetic tape and film recording**

IT'S COMPARATIVELY simple to write about sound recording equipment. The recording man's experience is factual with regard to equipment. He can measure the performance of various units; their characteristics are fixed and their performances will repeat themselves. In brief, you know what you have. It's a package of known quality. Even the microphones can be measured and appraised by utilizing the proper equipment. But, in spite of these known factors, when we finally start to record we frequently find that the results are not in keeping with the quality of our equipment. Why?

The answer lies in the fact that there are two very distinct factors involved in recording. One is the equipment which is measurable. The other is the area in which you record, which is not so simple to measure. You can easily learn to control your equipment, but the area in which you record may be only partly under your control. At times it may be completely out of your control, making it necessary to adapt yourself to its defects and limitations.

There is little doubt that less is known of the acoustical characteristics of recording areas than of any other part of the recording process. One of the reasons for this lies in the nature of the problem. Acoustical properties are not readily measurable. In fact few recording men ever measure acoustical properties. Instead, they learn to deal with the problem by ear. And, therein lies the key to the problem: learn to listen!

Learn to listen? This advice may sound absurd. Doesn't the recording man spend nearly all of his time listening? Yes, but I don't mean the sort of listening you do when

monitoring a narration track. I mean listening to the 'acoustical character' of the area in which you are going to record. Learning how to do this calls for practice. Sometimes a little setting will help. But, the main thing is to learn to appraise the character of an area by ear since each area will be a little different.

If you question this, try the following experiment: using a portable recorder and microphone and a speaker with a good voice, make a series of recording takes all over a particular area. Go from one room to another, or from one part of a room to another part of the same room. Try hallways, washrooms, just inside the door and then out in the middle of the room. Record inside closets. Observe these rules: always place the speaker exactly the same distance from the microphone for each take and have him speak straight into the mike. It's all right to work at an angle from the mike, if the same angle is used for each recording. Don't get too close to the microphone—stay about two to three feet away, or the closeness of the voice to the mike will block out the acoustical characteristics you want to hear. Use a section of yardstick cut at the exact length you want the speaker to be from the microphone so the stick can be used to measure all the same distance at each recording location. Read exactly the same sentence in each recording location and use a sentence long enough to give you time to listen and compare, but short enough so that you'll be able to hear the various sentences played back, one right after the other, for close comparison. The faster the playback, or the closer the short sentences are to each other, the more obvious the acoustical differences will become.

Now, when all of these separate location recordings are completed, prepare your magnetic recording film or tape so that the sentences will follow one another rapidly in the playback. This will give you maximum contrast as you listen.

What will you hear? I am not certain just how to describe it, but each area will have its own separate and distinct characteristic—and overall sound quality with its own acoustic identity. Some will be obvious. The sentence re-



coded in the middle of a very large room will be obviously different from the same sentence recorded in a small closet behind a closed door. Others will have very subtle differences—in fact several locations may sound alike—the difference being so small, so subtle that you won't be sure it's there until you listen very carefully.

What makes the recordings from these different locations sound different? It's the acoustical characteristics of the separate locations. Acoustic control involves the study of reflection and/or absorption of sound waves.

It's unlikely that anyone reading this has ever heard a sound that was pure and unreflected. Analyze your daily routine. All day long and part of the night you are hearing various sounds, always reflected. A few research groups have designed, built, and tested sound rooms for the study of sound. Some rooms have been built to eliminate sound reflection. Those who have had the opportunity to stand in the middle of such a room completely devoid of reflection report it was a very unpleasant experience, that no one would deliberately choose that kind of area to live in. It's unnatural. Under such laboratory conditions, they heard their own heartbeats, their breathing and miscellaneous sensations of sound created by various types of nervous activity in the hearing mechanism.

So, it's unnatural not to have reflection and absorption of the sounds you hear. You need both reflection and absorption in the proper amounts in order to have natural sound.

Acoustical treatment of a given area alters and controls the reflection and absorption factors. Certain kinds of materials absorb high frequencies but reflect low frequencies. Other materials do the reverse—absorb most of the lows and reflect most of the highs. Acoustical measurements of these qualities would result in what we call a non-linear curve. Practically all interiors except those rigorously engineered invariably have complex reflection and/or absorption conditions.

Creating a desirable combination of reflection and absorption in order to suit a particular recording situation is really a problem for the acoustical engineer. Many of us tackle this problem in a rather hit and miss manner. Many film recording men go at it with only one thought in mind—to keep out an-



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wanted noise. Keeping out unwanted noise is certainly desirable, but it's only incidental to the creation of an acoustical environment that will be satisfying to work in.

The art of acoustical measurement most frequently used is "absorption." If you were in a room completely closed, none of the noise for sound could escape. But, if you cut a hole one foot square in one wall (and the wall was very thin) all the sound that hit the square foot hole would escape through it. We call that 100% absorption. Or, in other words, zero reflection. Most materials are rated by their ability to absorb certain frequencies, and it's always a fraction of one. Only a square foot hole in the wall could absorb 100% of the sound that reaches it. This is the absorption unit used by acoustical engineers and only a square foot hole in the wall could have a linear absorption characteristic—in other words, it could absorb a 100 cycle as well as an 8000 cycle tone. Of course, it doesn't really "absorb" it. Instead it lets it escape. But it's a handy mental point of view to hold to organize our thinking acoustically. No material absorbs sound uniformly. Thus absorption curves are termed nonlinear. The manufacturers of acoustical tile aim to create surfaces that will absorb uniformly, but read the characteristics of the product—absorption at 100 cycles 25%, absorption at 4000 cycles 75%, etc. An ordinary acoustical treatment is a compromise.

Perhaps that doesn't matter. Your ear has learned to complex reflection-absorption curves all your life and you automatically consider this normal. But good recording practice does demand some control, and we achieve that control by various means. The simplest means lies in working close to the microphone. It's obvious that the closer we get to the microphone, the less amplification we have to use to record the voice, and the less amplification we use the less likely we are to hear the unrelaxing sound that's obviously around in the room or area in which we are working. Working close to the mike doesn't in any way change the acoustics of an area but simply eliminates the extra sound as a recording factor.

However, sometimes voice will sound better if there is some sound reflection for the microphone to pick up. You can arrive at a satisfactory recording situation only by trying. The room may be

too dead for a voice to work at a distance from the microphone, in this situation either work in closer to the microphone to eliminate the dead effect of the surroundings, or erect some hard finish surface around the voice, or at a distance, that will make the voice sound more lively.

In general, hard, slick surfaces will reflect sound better than porous soft materials. Glass, porcelain, hardwoods, slick concrete floors or walls all reflect sound rather efficiently while carpets, drapes, curtains, clothes, various fabrics or porous materials absorb sound. Working with a combination of reflecting materials and absorbing materials, you can alter the acoustical character of a recording area.

If we create a sound in an area, and have a way to measure its intensity we find that after a moment or two the sound has completely disappeared. Acoustical engineers refer to this interval as the "decay time," i.e., the length of time that it takes for a particular sound in a particular recording location to weaken or drop away to a predetermined percentage of its original strength. Naturally, in an area where there is a lot of hard surface that reflects sound, the decay time will be quite long. We have all noticed how the sound in a large railroad station waiting room seems to go on forever and ever. In part, that's because the rooms are very large and it therefore takes the sound longer to reach and reflect from the surfaces, but it's also because the surfaces are generally made up of hard materials—lots of glass and hard slick floors, all reflecting surfaces. A big station waiting room could be so treated to have very little, if any, reflection and its character then would be approximately that of an outdoor area. However, even outdoors, in the middle of a field, there is some reflection even from the ground. You cannot escape it. So you have to control it.

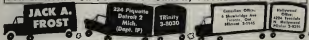
A recording engineer should learn to recognize the decay time phenomenon and with a little practice be able to judge how long it takes sound to decay before it drops below the threshold of hearing. In radio broadcast work in days gone by, we talked of  $\frac{1}{2}$ -second,  $\frac{3}{10}$ -ths of a second, occasionally of  $\frac{3}{16}$ -ths of a second decay time. We considered a room with a  $\frac{1}{2}$ -second decay period quite "live." Nowadays, that's not considered too long a decay time as we are now dealing with decay periods up to several

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seconds. Personally, I prefer the decay time in voice recording to be under a second and to have good crisp reflection of the high frequencies in order to create good sibilants. However, acoustic variable for good voice work aren't necessarily good for music.

In the early days of broadcasting, almost all sound studios were treated to make them as "dead" as possible acoustically. There was confusion between "deadness" and "quietness." The trend over the years has been to more lively reflection of sound. Some of the sound engineers have gone to extremes in creating long decay times. This has been particularly noticeable in England.

The placement of the surfaces in a recording area, in relation to each other, is an important factor in the creation of acoustical character. Obviously, sound can reflect back and forth between hard parallel surfaces just as a tennis ball gets bounced back and forth between two opposing players. This factor can be affected and altered by other factors so that there will be different acoustical characteristics with in one single recording area. One of



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our sound stage illustrates this point. At the south end of this stage we have noticeable reflection between the ceiling and the floor. Standing at this point you can clap your hands sharply and count the reflections. I've counted up to about twenty. This creates a fascinating sound and, of course, would be fatal for normal recording. This is just one rather small area within a sound stage measuring about 80 x 110 feet. It can be controlled in various ways, such as by design of and type of materials used in a set and by use of recognized acoustical control materials.

Some motion picture and recording studios have pencils or columns built at angles, or broken into sections. The obvious purpose is to break up parallel wall and ceiling surfaces to control the reverberation factor. In smaller rooms it's more difficult to hear the specific sound reflection between parallel surfaces, but it's present and contributes to the general acoustical character of the area.

In those areas where we have no control of the acoustical character, the only thing we can do is block it out from the microphone to the best of our ability. We do this by working close to the microphone or by affixing a directional microphone which, when faced towards the desirable sound, blocks out undesirable sound.

When we record in an area where we do have acoustical control, we either

employ an acoustical engineer or we experiment. We start by insulating the room so that we block out to the best of our ability the undesirable sounds that originate in adjoining areas. Then we go to work within the room itself, using various combinations of sound reflecting and sound absorbing materials. This we do until we arrive at that combination which our ear tells us will result in the most natural and desirable recorded sound.

For the man whose job it is to record an acceptable sound job for a film production, there is nothing more substantial or as hard to pin down as acoustics. It is probably the most troublesome of all the problems he has to face. Knowing how to cope with it can expedite the recording session and lead to real professional recording results.

This concludes the series of articles on documentary sound recording for industrial, in-plant, and small business film producers. Obviously, we have had to gloss over much in order to discuss the most pertinent phases and factors relating to magnetic film and tape recording for sound films. We hope, however, that what has been discussed will prove helpful to those readers who contemplate setting up the equipment and facilities that will enable them to record sound for the films they photograph. ■

Illustration of the company's mobile recording unit. I have no illusions whatsoever about using VTR to record a motion picture production for video transmission. The Ampex crew were most cooperative, and their technical directors and engineers never demonstrated that reluctance to my curiosity that I have found in television stations where it was felt I was encroaching on the video technicians' jurisdiction. The Ampex men, on the other hand, went all out to make their equipment understandable to me so that I could use it, with the result that we had at all times a coordination of thought and application leading to successful results.

How really simple it is for a video engineer and a film cameraman to work cooperatively together in VTR was shown in the course of the Ampex demonstrations when the company's technical director—once he understood the pictorial effect I was striving for before the camera—readily produced the desired result on the monitor screen by adjusting contrast and brightness controls with my guidance to bring out the best of the lighting that had been created for the scene.

To achieve pictorial results in video tape recording comparable to the best cinematography, it is necessary that the same careful attention be given to the scene before it is recorded. All the details of this preparation—lighting, camera placement, composition, etc.—after proper consultation with the director, producer, etc., should be the function of the director of photography. He is the man who should determine what degree of contrast should prevail for a scene, what degree of brightness or shading it should have—in fact, anything that has to do with the aesthetics of the recording process should be in control of the director of photography just the same as it is in motion picture production. From this point, the function of the electronics men is to put this composition faithfully on tape.

Whenever the director of photography's role in VTR is discussed, invariably the view is raised that electronic tape recording is not photography. Perhaps not in the sense that a light-sensitive negative film is used, but aside from the material on which the image is recorded, the same basic concepts of pictorial composition, lighting, etc., prevail so that it is only reasonable to consider the term photography to embrace any process that has to do

## VIDEO TAPE RECORDING

Continued from Page 227

just as good a job within the capacity of tape as can be done with motion picture film, considering the deficiencies of the two mediums as related to one another. To do this, of course, would mean that the electronic engineers and technicians should confine their operations to their own province and not intrude in that of the director of photography, who would have similar consideration for the functions and responsibilities of the electronics engineers.

The most successful VTR operation, as I see it, would be where the various electronic functions, up to the point of the camera and the equipment by which the quality of the camera pickup is controlled and maintained on its way to the recorder, would become the sole responsibility of the men most experienced in this field—the motion picture

directors of photography. I believe that these same men who have been so successful over the years in recording pictures on film are best qualified to direct the recording of pictures on tape—to determine not only the pictorial composition of a scene but also its brightness, shading and contrast.

The present video philosophy of vesting the "director" with complete and undisputable authority to place the camera or cameras on the set, decide what lens to use, and determine what degree of brightness is to prevail in the lighting, etc., all must change if VTR is to benefit by the film director of photography's years of lighting and image recording experience.

As a result of my experience in working with the Ampex engineers and technicians during the four-day demon-

with recording an image on any medium for any purpose for delayed viewing.

I should further point out that videotape has a response to the spectrum very similar to that of panchromatic film conditions we use today, thus permitting the use of various filters to achieve results identical to those we have found possible with film.

The advent of video tape recording, it seems to me, presents the video industry with the opportunity to achieve for the first time all the aesthetic qualities in TV productions that the entertainment public has long been accustomed to in motion pictures and which they expect to find in dramatic TV presentations. I believe that when television puts back all of the vital things it removed earlier in producing live video shows — mainly the coordination of all the aesthetics of pictorial presentation by a director of photography—they will be getting a superior result in program presentations.

Television has suffered from mechanical and artistic deficiencies, the result of false economy moves that eliminated manpower, in many cases in the wrong places. In this respect some in the industry saw in the advent of video tape recording a new economy tool that would enable them to cut manpower still further. The truth is that while it is possible to record a show on tape with a smaller crew than is now required for putting a show on film, the reduction is not as great as the economic adherents have tried to impress upon the industry.

As an example, the loss not only in quality but in efficiency of operation and time wasted through the sheer slowness in eliminating the necessary allocation of responsibilities could well stand in the way of the promise moving that can certainly be made possible with videotape—if and when it is properly used.

Thus saving can surely be realized through the many costs inherently eliminated by this medium, but principally through increased efficiency with its resultant saving in time—the most costly factor in the physical production of motion pictures.

In my opinion, the television cameras used for video tape recording should be handled by prominent camera operators such as we now use in photographing with film. The objective is the same whether the operator means a

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Mitchell BNC or a TV camera—to record the scene and action as laid out by the director of photography in concert with the director and the art director. The operator should not be required to function as some kind of three-headed monster who does everything. His most important function is to compose and to manipulate the camera to best record the composition, the scene as would be done with film.

Applying film studio techniques still farther and mounting the TV camera on a crash dolly or similar mobile unit, the camera assistant could handle all focusing operations, make lens changes and mount diffusion discs when necessary. It would be a simple matter to mount a slave monitor on one side of the camera that would enable the assistant to maintain a visual check on his operations. The overall effect would be to enable the camera operator, now freed of the responsibility of focusing and changing lenses, to concentrate on composing and recording the action playing before him.

A further and equally important advantage of this type of operation is that the director of photography, using a separate monitor, can see at all times exactly what the operator and assistant are recording; and through simple telephone communication he can relay further instructions to his crew while the actual "filming" is going on. This advantage alone could prevent many retakes with resultant savings in time.

One thing that I successfully demon-

strated to the Ampex engineers is the capacity of the television camera to diffuse diffusion as we have used it in motion pictures, so that it is possible to improve facial characteristics in closeups without any loss in resolution. As far as I know, this has never before been attempted. With the same type diffusion discs on the TV camera lens that we use on a motion picture camera, I made specific tests. My subject was a young woman selected at random on the set who was placed before the camera before the diffusion discs were set in place. The camera operator and engineers were asked to focus upon the subject so as to get the sharpest possible image on the monitor screen. I then pointed out certain characteristics of the subject's face: lines around the mouth, pores of the skin, little hairs around the eyes—the things that movie stars have learned that directors of photography know how to control or eliminate by means of lighting and diffusion. I then placed the diffusion disc in front of the lens. The same sharpness was there on the monitor, the same optical integrity; but magically all the objectionable lines and facial blemishes had disappeared and the overall result was one of remarkable improvement. This is but one example of what the veteran director of photography can contribute to the techniques of video tape recording.

Today, the real potentials of VTR are hamstringed much the same as were the

Continued on Page 232

## AUTOMATIC EXPOSURE CONTROL

Continued from Page 234

positioning. Index and lens dials are incorporated in the amplifier circuit of the control box permitting the Autex to be set for any lens, film, and exposure time combinations even when the control hand is inaccessible.

The standard Autex with its built-in linear potentiometer may be used without modification on lenses having linear  $f$ /stop scales, that is, lenses having equal spacing between full stops throughout the range of the iris.

The standard linear scale may be used with lenses having slightly non-linear  $f$ /stop scales for all work except where extreme accuracy of exposure is required.

Where a non-linear lens must be used, a potentiometer operated by

a cam cut to match the  $f$ /stop scale of the lens may be mounted on the lens. The use of linear or nearly linear lenses whenever possible is recommended, however, because of the additional cost of special cam-operated potentiometers.

The transistor amplifier allows the Autex control box to be conveniently small. Designed with smoothly rounded edges, the shape of the control box was chosen to fit into a photographer's jacket pocket for hand-held camera use or to be mounted conveniently when it's used in fixed installations.

The compact circuit is produced using the latest printed circuit manufacturing techniques. To provide even greater electrical stability and resis-

tance to rough mechanical handling, the circuits are potted in epoxy resin. Laboratory and airborne tests have proved Autex to be insensitive to extreme vibration and shock.

Inexpensive, long-life batteries in the control box make Autex independent of external power. Where a remote or airborne installation makes the use of external power more convenient, 28 v. DC or 110 v., 60 to 400 cycle AC power packs, which replace the batteries in the control box, are available.

Since the Autex may be used on all cameras and lenses, and with all exposure times and types of film, and by using either external power or self-contained batteries, a single Autex will serve practically any filming requirement without need for special equipment for each application, the manufacturer points out.

## ANIMATION STAND

Continued from Page 238

board and the right-hand handle turned. Each full turn moves the baseboard one sixth of an inch. The handle on the left brings the board forward, and here a full turn moves it one-twentieth of an inch. The relationship is deliberate, to insure an easily-remembered ratio between the rotations of the two handles.

If a movement at an angle of forty-five degrees across the background is required, the painting is attached to the baseboard so that its diagonal is parallel to the front of the board. The camera is swivelled through its axis—the center of the lens—until it is at the correct angle to the background, and a normal panning movement is made with the right handle. Other movements are seldom required; when they are it is not difficult, with these handle ratios, to calculate the rotations needed.

The camera is an old magazine-loading Agfa Movia, with all the mechanism removed. It is driven by a zoom-photo motor. The release button engages the clutch. At the same time that each frame is exposed, a simple electric buzzer sounds and a spring-loaded frame counter is operated.

The camera takes a maximum of forty feet of film. A key-shaped handle fixed through the camera casing indicates by its position whether or not the shutter is open, and this must be set before any exposures are made. (Other

wise, of course, the shutter might be open while only one is being changed, and closed while each frame is supposed to be exposed.) Back winding for double exposures involves removing the camera and turning the film back by hand, each time equalizing one frame.

The camera clips firmly into position on its platform, and a final fine adjustment can be made. To line it up, a chart showing field sizes is registered through the lens against the bar of the baseboard platform, and the background placed on the registration pegs. There are peg bars for the top or bottom of the pictures, and a supplementary which can be used at the side, though this is rarely needed.

The distances between the pegs correspond to the holes of an ordinary office punch. After the first two drawings, holes are punched in the background sheets before painting begins so that register is exact. The peg bars are movable, and Daborn has added an additional rotating handle which will pan the peg bars, but he feels that this is a refinement which most amateur animators would find superfluous.

"One difficulty with pans," he said, "is coming to a satisfactory stop. The speed of slowing down is very tricky to calculate." To solve this he has attached a micrometer dial gauge which indicates thousandths of an inch and makes the gradual slowing much simpler.

The sheet of glass placed over the background and only is lifted clear by a foot pedal. "The less you have to do with your hands the better it is," Daborn assured me. "In the same way the more automatic refinements that you can add, the easier the work becomes."

A foreground frame can be moved up and down by another rotating handle, which again moves at a twentieth of an inch per full turn. This is used for otherwise animation, tilting effects, and for foregrounds which are to be deliberately thrown out of focus. A second foreground frame can be locked to the stand when needed. This is almost entirely reserved for special effects, such as rippling. Daborn finds two ripple glasses moved simultaneously in different directions achieve the best results here.

Two one-hundred watt bulbs in reflectors, one each side of the stand, provide the necessary lighting. The exposure time is permanently set and an aperture of  $f/11$  is used with Kodachrome A.

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One of the stand's most ingenious arrangements is a simple bracket which holds a Weston exposure meter and a piece of card just below one of the lamps. When Duborn wants a smooth twenty-four frame mix, he adjusts the rheostat to dim the lights in such a way that the Weston needle, registering the light reflected from the card, moves one point against the scale for each frame exposed. Thus, starting with the needle at twenty-four, he exposes one frame, then dims the lights until the needle indicates twenty-three and takes the next frame, and so on. After rewinding, he simply reverses the procedure, returning from zero to twenty-four. The result is guaranteed.

A chart at the back of the stand indicates the distance in inches from the lens to the baseboard surface. When the camera is less than twenty-four

inches from the surface a supplementary lens is needed and an additional focusing chart is used.

For tracking shots, Duborn uses a sliding scale chart which operates like a slide rule. If he needs to track from, say the five field to the two field in one hundred frames, a check on the chart immediately shows that the closest figure for an even track is sixty-six frames, and that this means two revolutions of the tracking handle between each frame. Every handle movement is indicated on Duborn's detailed dope sheets (Fig. 3).

His latest film, *Let Battle Commence*, shows how the Grasshopper Group shot *The Battle of Wagonport* on this stand, their use of dope sheets and in fact tells the complete story of an animated production from script to screen.

**LICKING CONTRAST WITH ND FILTERS**

Continued from Page 229

portion of a graduated filter over the street so that the vertical edge is lost against the side of the building, it is only necessary to give the exposure required to record the shadow portion and the filter will "dodge" the sunny street area to match.

Graduated neutral density filters can be just as useful indoors as out. A church interior may be lit with artificial light so that the action can be filmed satisfactorily at a wide lens aperture, but there may be windows that are completely out of balance and "burn through." The remedy would be a neutral density filter—one that will allow the windows to record at the same exposure as that given the arti-

ficially illuminated portion of the scene.

Many cameramen simplify their exposure calculations by standardizing on the .30, .40 and .90 density filters, which require increases of one, two and three stops respectively. The .50 ND is also a very useful filter since hot skies will often be  $1\frac{1}{2}$  stops higher in exposure value than the rest of the scene.

When graduated or partial NDs are utilized to correct only "hot" spots or areas in a scene, they have, in a sense, no filter factor since the normal exposure is used and the filter compensates for the "hot" portion, thus equalizing or balancing the overall exposure.

**NEUTRAL DENSITY FILTER FACTORS**

| DENSITY | TRANSMISSION | FACTOR | APP. STOPS INCREASE |
|---------|--------------|--------|---------------------|
| .10     | 90%          | 1.3    | — $\frac{1}{3}$     |
| .20     | 80%          | 1.4    | $\frac{1}{3}$ +     |
| .30     | 70%          | 2.0    | 1                   |
| .40     | 60%          | 2.5    | $1\frac{1}{3}$      |
| .50     | 50%          | 3.1    | $1\frac{1}{2}$      |
| .60     | 40%          | 4.0    | 2                   |
| .70     | 30%          | 6.0    | $2\frac{1}{3}$      |
| .80     | 20%          | 6.7    | $2\frac{2}{3}$ +    |
| .90     | 15%          | 7.7    | 3                   |
| 1.00    | 10%          | 10.0   | $3\frac{1}{3}$      |

When employing neutral density filters as partial filters to hold back only the hot portions of a scene, first read the normal part of the scene and then the part that will be filtered. Then choose a density that corresponds to the difference in exposure. With the filter in position the entire scene can be recorded with the normal exposure.



The employment of graduated or partial NDs requires a professional matte box which will handle 2-inch or 3-inch square filters. Such professional cameras as the Mitchell, Moxore, Arriflex, Camerette, and Auricon come equipped with matte boxes that will take glass or gelatin filters, either round or square. Professional matte boxes are also available as an accessory for the Bell & Howell Films, Bolex, Cine Special and similar semi-pro cameras. Cameras that permit viewing through the taking lens, either directly or via a reflex system, and are equipped with a pro matte box are capable of a great range of filter effects. They enable the cameraman to see what he is doing so that precise adjustment of filters can be made.

The new professional matte box for the 35mm Arriflex permits use of 3-x 4-inch graduated filters which can be precisely positioned through manipulation of a rack and pinion gear by which the filter's graduated line may be accurately set at any position on the film frame. The additional length of the filter permits it to be moved over a much wider scene area.

Gelatin NDs will often prove more useful than those of glass since they can be cut to any shape to fit a particular filming situation. The entire series of ten densities previously mentioned, can be purchased in two- or three-inch gelatin squares and will afford a wide range of control. Filters that are apt to be used often, however, should be mounted.

Different gelatin densities may be placed over various parts of the same scene to gain special correction. The sky portion in a scene, for example, may require a half-inch strip of .50 density ND across the top of the frame while a "hot" foreground corner may require use of a piece of .30 density ND set at an angle to adjust exposure at the bottom of the scene.

Color gelatins can be taped on the color conversion filter itself, when such

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are employed, or on a piece of clear "E" glass. Eastman Kodak Co. can supply 2-inch and 3-inch square metal gelatin filter frames, or an adequate frame can be cut from stout cardboard and the cut of ND gelatin taped in place. It is necessary to position the filter a short distance in front of the lens so that it can shade the image properly. A partial or graduated filter placed too close to the lens will act as an overall filter. It is important that the filter's alignment be checked while the lens is closed down to the stop that will be used.

While precise matching of horizons or other lines is not always necessary, care should be taken to place the filter's edge so that it merges smoothly with the scene. The line of demarcation where the ND cuts across the image should not, however, be apparent. A bit of sky above the horizon can best be left uncovered since the sky is usually lighter at that point. Positioning the filter so that it cuts below the horizon will show that part of the terrain lighter in tone and destroy the effect.

Generally speaking it is best to keep any action entirely within either the filtered or the unfiltered portion of the scene, because anything moving from one area to the other may show an abrupt change of tone. It is sometimes possible, for instance, in the case of a backlit building where the shadow portion locates the picture, to have traffic move across the frame. However, careful camera sagging is necessary so that the action occurs above or below the horizon or within one area or the other of the scene.

The use of graduated or partial NDs is best restricted to static shots such as street scenes or establishments long shots. Here it is obvious that the camera can not be panned or tilted once the filter is set in the matte box. However, where the horizon remains a long straight line it sometimes is possible to pan the camera, since the filter's edge will remain pretty well within the horizon boundaries. Portions of neutral density filters may be positioned to cover a fragment area of a scene providing the filter's edge can be properly registered. In such cases the lighter density NDs will be the easiest to use. So if the line "shows," try a lighter density.

Preserving the light balance of a scene by holding back the hot highlights is only one of many advantages possible with ND filters. Another is to unbalance the lighting for a special

effect. A night shot which is filmed "day for night" (using a 21A-50B filter for black-and-white, or with the ES removed for a blue effect in color) may still show a hot sky. Here it is a simple matter to use a graduated ND across the sky area (a heavy ND in this case since only a little sky tone is required) and bring it away down to match the night effect. NDs, of course, can be used in combination

with any other filter for either black-and-white or color photography.

The intelligent use of neutral density filters, either graduated or the partial gelatin type, for holding back "hot" areas in scenes will greatly enhance the quality of a color film by extending the range of the emulsion to encompass filming situations that would ordinarily be far beyond its inherently small latitude. \*

## CAN EKTACHROME BE INTERCUT?

*Continued from Page 234*

and built printers particularly for color positive work, and the results show up in an improved print. However, an extra generation is involved in color positive work, and it would be surprising if it did have the same definition as is found in the color reversal print from the originals.

"In printing detail, color positive has an advantage. It provides greater detail in the printing of highlight and shadow areas. This is a matter of degree. We saw a noticeable improvement with respect to printing of shadows and highlight areas when Eastman introduced the color reversal print stock (type 5299) which is now being used. There's a further improvement in printing, definition and detail with the new Eastman 16mm Ektachrome."

What are the advantages of 16mm color positive printing, when you start with 16mm color reversal originals and work through a color internegative? According to the Calvin Company there are five major advantages.

### 1. Lower print price

2. Faster printing. A single strip is used for photography incorporating optical effects and timing changes, instead of the original A&B rolls.

3. Protection for the original film. The A&B rolls are utilized only in printing the 16mm color internegative.

4. Acceptable color

5. Greater detail in highlights and shadows.

For practical purposes, the Number One advantage above is usually the No. 1 reason leading a customer to color positive, the company points out.

What are the advantages of color reversal printing? Calvin's technical staff cites two:

1. Definition. The color reversal print made from the originals still provides the sharpest picture on the screen.

2. The colors are appealing. In side-by-side comparison customers invariably prefer the



OVER 250 PERSONS attended the 13th Annual Motion Picture Production Workshop staged by The Calvin Company February 2-3-4, at the Rialto City hotel, Los Angeles. Group represented 36 states and over 10 dozen foreign countries. The three day sessions were highlighted by presentations of a number of guest speakers and Calvin personnel.

color print from the original, over one from the color positive.

"We are hundreds of color prints for comparison every month. We're convinced that the color reversal print from the original is still the best print," said Calvin's Bill Belden.

So, what form of printing should you order?

This is an individual matter, depending separately on individual preferences, the article in *The Aperiore* explains.

"If your film is headed towards the making of hundreds of prints, the chances are that the advantages of lower price and protection of the original will outweigh the other factors."

"If your print order is not likely to exceed a few hundred prints, and if screen quality is a factor, you'll probably prefer the color reversal print. If your print order is for a few, or a few dozen, you'll undoubtedly prefer the color reversal print," the article concludes.

## FILMING "RIO BRAVO"

Continued from Page 225

movement in this film, since the action was not staged on a sweeping scale. The compositions are mostly tight with foreground framing and simple panning to follow the movement of the characters. However, there are some follow shots in which the camera tracks with groups of horsemen riding into town. To film these sequences Harlan used a piece of equipment for which he has the highest professional praise, the Chapman beam. It is basically a truck with a flat bed on which is mounted a movable camera crane that can be raised or lowered by an operator. It operates on either gasoline or battery, can go anywhere a car can go and is much smoother in its results than a camera truck. To follow action for "Bravo" it operated smoothly at speeds up to 30 miles per hour.

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—American Cinematographer

Harlan laughingly observes that his only real problem on "Bravo," aside from the heat and the grasshoppers was Dean Martin (whom he describes as a great trouper and a fine actor). It seems that Martin is forever telling jokes on the set and is so good at it that the crew is always reluctant to stop laughing and go back to work.

Harlan, who looks younger than he would have to be in order to have had his 82 years of experience as a cameraman, started his career in 1923 as a lab technician at the Famous-Players Lasky Studio. Allen Dwan, Hollywood's leading director at the time, wanted to make an actor out of him, but Harlan refused. Since he did want to go on adventurous locations, however, he managed to get a job as an assistant cameraman. The directors of photography of the day guarded their photographic secrets jealously and would not teach a newcomer their techniques. Finally Harlan did get his big chance through the help of Archie Stout, A.S.C., whom he regards as the greatest of exterior cameramen and who is still his closest friend.

Harlan has no high-flow theories about techniques except to keep his photography clean, honest and as close to key with the story as possible. "There are certain rules that always must be observed because of the nature of equipment, film conditions, etc., but a great deal depends upon the man you work for, the director. If he is inclined to appreciate photography and a creative camera, then the cinematographer has a chance to put his skill and talent to work to enhance the story."

In this regard he has the highest praise for "Rio Bravo" producer-director Howard Hawks with whom he also made the memorable "Red River" some years ago. "Hawks is the kind of director who always starts off with a definite idea in mind. He makes suggestions, then he lets the cameraman take off on a tangent to extend this idea photographically. He has a real feel for the visual and he'll work all day to get a particular effect. On 'Red River' we worked an entire day to get one short scene with just one man in it, but he wanted it right. He's great for camera. He let's you express yourself and if your idea fits his fancy, he says it. If it doesn't, he tells you why he doesn't agree with it. He's a great guy to work with."

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## VIDEO TAPE RECORDING

Continued from Page 246

moves with the advent of sound, when we had to throw away all the aesthetics of photography in favor of the supposed requirements of sound. Today, electronics engineers contend there are many things you cannot do with the electronic camera. The contention has often been that the electronic limitations preclude any considerations for aesthetics and creative ability behind the camera, and the artistic things have been discarded in favor of electronic perfection. This need never become so important, however, that it supersedes the very purpose of the medium—to create entertainment with all the beauty and pictorial enhancement that make motion pictures what they are today.

It is my firm belief that in creating

such entertainment for television and by applying to it all the artistic elements which the electronic camera is capable of receiving, it is unnecessary to destroy any of the electronic medium's efficiency. Actually, the two mediums—TV and motion pictures—go together. And considering what has been accomplished with film, there is no reason whatever why the motion picture director of photography cannot achieve the same or possibly superior results using tape. For, as I have said before, tape is nothing more than another type of extremely sensitive film. It is the cameraman—the director of photography — therefore, who should coordinate the aesthetics of video tape the same as he does with film.

## ROOM LIGHT AND PROJECTOR CONTROL BOX

By JAMES R. OSWALD

HOME MOVIE FANS with a desire to improve projection methods will welcome the handy home-made power control unit herein described. With its use, a flick of a single switch on top of the compact device simultaneously turns the projector on and extinguishes the room lights. Then, after the show, another flick of the same switch re-illuminates the room and shuts the pro-

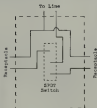


FIG. 2—Wiring diagram.



FIG. 1—One switch does all.

jector off. No more groping around in the dark for elusive wall switches.

To operate the projector is plugged into either one of two receptacles provided in the all-metal housing. A lamp (room light or several lamps) is then connected to the remaining

receptacle. Line cord of the unit is plugged into the regular wall outlet. The switches that previously controlled projection lamp and motor must be placed in "on" position and left that way.

Assembly is relatively simple for anyone with even a limited amount of electrical and mechanical know-how.

The following parts list will prove helpful:

- 1 15-amp, single-pole, double-throw toggle switch.
- 2 "Amphenol"-type standard receptacles.
- 1 16-ga. rubber covered line cord of desired length with conventional male plug attached at one end.

- 1 Rubber grommet to fit above card.
- 2 5" x 5" x 3" metal utility cabinet (of the type sometimes used to house various electrical controls).

In assembling a power control unit along the compact lines pictured, wiring should be done insofar as possible before mounting the various components in the case. E

## "OSCAR" NOMINEES

Continued from Page 233

tion ceremonies.

The ten productions nominated for achievement awards and the cinematographers who photographed them are as follows:

**Black and white:** "The Defiant Ones," by Sam Leavitt, ASC; "Desire Under the Elms," by Dan Fapp, ASC; "I Want To Live," by Leonid Lindon, ASC; "Separate Tables," by Chas. Lang, ASC; "The Young Lions," by Joe Mac Donald, ASC.

**Color:** "Auntie Mame," by Harry Stradling, ASC; "Cat On A Hot Tin Roof," by Win Daniels, ASC; "Gypsy," by Joe Ruttenberg, ASC; "Old Man And The Sea," by James Wong Howe, ASC; "South Pacific," by Leon Shamroy, ASC.

Of the ten directors of photography named above, seven have previously won one or more Academy Awards for photographic achievement. They are William Daniels, who won an "Oscar" for the black-and-white photography of "The Naked City" (1948); James Wong Howe, for "The Rose Tattoo" in black-and-white (1956); Charles Lang, Jr. for "A Farewell To Arms" in black-and-white (1953); Leonid Lindon for the color photography of "Around The World In 80 Days" (1956); Joseph Ruttenberg, who won his first "Oscar" for the B&W photography of "The Great Waltz" (1938), a second for "Mrs. Miniver" (1942), also in B&W, and a third for "Sunbody Up There Likes Me" (1956) also in B&W.

Leon Shamroy also has three "Oscars" to his credit for "The Black Swan" (1942) in color, "Wilkes" (1944) in color, and "Leave Her To Heaven" (1945) also in color. Shamroy also has more nominations for cinematography to his credit than any other Hollywood director of photography.

Harry Stradling previously received

an "Oscar" for his black-and-white photography of "The Picture of Dorian Gray" (1945), and has been a frequent contender as a nominee.

The respective merits of the photography of the ten nominated productions will be the subject of much discussion and no little controversy during the next few weeks which precede the final voting and awarding of "Oscars" at the Academy's gala presentation ceremonies. This will take place at the RKO-Paramount theatre in Hollywood the night of April 6th. At that time one "Oscar" will be awarded for best achievement in black-and-white cinematography and one for best color photography.

The record world-wide audience of more than a quarter billion persons who either saw the Academy Awards show last year on television or heard it via Radio is expected to be topped this year due to the addition of radio stations throughout Alaska and the increasing of TV outlets in Canada.

A total of 217 North American TV Stations will carry the full 105 minutes of the 31st Annual Awards Show on April 6th, and 25 Canadian outlets now are set to use one hour of the ceremonies. With new Radio stations added from Alaska, the number of commercial radio broadcast outlets will total 199 this year.

## QUESTIONS & ANSWERS

Continued from Page 214

the distance is measured from the lens to both subjects to calculate what stop is required to increase the depth of field so both subjects will be in focus. The light is then increased to accommodate the stop.—Arthur Miller, A.S.C.

**Q** The lenses on my 35mm camera are slow, of inferior type, and uncoated. Is it possible to have them coated? Would it pay to do so?—M.S., Philadelphia, Pa.

**Answer:** Your lenses can be coated. However, optimum quality cannot be achieved with inferior type lenses. Suggest coating one lens and comparing results with that obtained from the uncoated lens.—Stanley Corwin, A.S.C.

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—Walter Strang, A.S.C.

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## PHOTOGRAPHIC ASSIGNMENTS

Continued from Page 219

### PARAMOUNT

CHARLES LANG, JR., ASC, "One-Eyed Jacks" (V-Film & Color; Paramount Prods.) with Martin Scorsese and Karl Malden. Martin Scorsese, director.

ROBERT BOKS, ASC, "But Not For Me" (VideoVision) with Clark Gable and Carroll Baker. Walter Lang, director.

HAROLD LUTTEN, ASC, "Hallelujah with a Gun" with Sophia Loren and Steve Forrest. George Cukor, director.

TED SMITH, "Tahiti's Greatest Adventure" (Shooting in Africa) with Gordon Scott and Steve Shuster. John Guterbrun, director.

JOSEPH LUCIELLE, ASC, "Cavew" (Hail Well to You) with Dean Martin and Shirley MacLaine. Joseph Anthony, director.

WILFRED CLARK, ASC, "Battle of the Coral Sea" (Masthead Picture) with Cliff Robertson and Gai Scala. Paul Verhoeven, director.

### PARAMOUNT SUNSET

MAURICE GUTENBERG, ASC, "The Hallelujah Story" (Paramount Film for UA) with Catherine Michael and Allison Hayes. Edward L. Cohen, director.

### REPUBLIC STUDIOS

NACK STEINBERG, ASC, "Leave it to Beaver" (Gambler Prods.) with Barbara Binkley and Hugh Brannum. Norman Tokar, director.

BERNARD KLING, ASC, "Wagon Train" (Revue Prods.) with Ward Bond.

ELIAS TRACKER, ASC, "Barlowe Gun" (Widow Glen Prods.) with John Payne. "Wells Fargo" (Overland Prods.) with Dale Robertson. Sidney Sullivan, director.

WILLIAM SCHEER, ASC, JOHN RUSSELL, ASC, "Savage Law Playhouse" (Revue Prods.).

JOHN WARREN, ASC, RAY BERNHARDT, ASC, "Mickey Spillane's Mike Hammer" (Revue Prods.).

ELIAS TRACKER, ASC, RAY BERNHARDT, ASC, "Backlash" (Revue Prods.).

JOHN RUSSELL, ASC, JOHN WARREN, ASC, "Alfred Hitchcock Presents" (Revue Prods.).

WILLIAM SCHEER, ASC, JOHN RUSSELL, ASC, "S A T" (Revue Prods.).

WILLIAM SCHEER, ASC, "Backlash" (Revue Prods.) with John Forsythe.

RAY BERNHARDT, ASC, ELIASH TRACKER, ASC, "M Squad" (Revue Prods.).

ELIAS TRACKER, ASC, JOHN WARREN, ASC, WILLIAM SCHEER, ASC, "Frontier City" (Revue Prods.) with George Montgomery.

JOHN RUSSELL, ASC, LINDSEY LUTTEN, ASC, "General Electric Theatre" (Revue Prods.).

LINDSEY LUTTEN, ASC, WILLIAM SCHEER, ASC, JOHN WARREN, ASC, "Savage Law Playhouse" (Revue Prods.).

JACK MACKENIE, ASC, "Star Trappers" (Revue Prods.) with Red Cameron, William Whitney, director.

JOHN RUSSELL, ASC, "Markham Series" (Revue Prods.) Carl Oswald, director.

EDWARD COLEMAN, ASC, "The D A Map" (Mark VII Ltd.) with John Garfield, "Fate Kelly Blue" (Mark VII Ltd.) with Wm. Reynolds and George Roquemore, Jack Webb, director.

### REVUE STUDIOS

JAMES BROOKER, Commercial.

WALTER STERNER, ASC, Commercial.

CARL GUTENBERG, ASC, Commercial.

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